WATER QUALITY AND USE

Beneficial Use Attainment

Due to degraded water quality, especially downstream from the mouth of Indian Creek, beneficial use attainment described in Table 4 will probably always be partial (MDNR 1984). At best, recreational activities in the lower reaches of the Blue River and Indian Creek should be restricted to limited body contact. Water quality in the Blue River upstream from the confluence with Indian Creek is suitable for water contact recreational activities. Water quality in lower Indian Creek is degraded due to effluent from sewage treatment along Indian Creek. The diversity and abundance of aquatic life below Indian Creek is depressed due to high runoff of solids, high BOD concentrations, and toxic materials. The disturbed hydrograph within the urban watershed also disrupts the biotic communities in basin streams.

Chemical Quality, Contamination and Fish Kills

The Blue River has a history of contaminant spills and fish kills. Unfortunately, the causes of most kills have remained unknown because of the difficulty in tracing pollution events in the urban watershed. During low flow periods, the lower three miles of the Blue River become grossly polluted and can become devoid of fish. Overall water quality in the Blue River and tributaries upstream from the confluence with Indian Creek is in satisfactory condition. These streams should be able to support diverse aquatic communities. The Blue River itself provides sport fishing opportunities for several warmwater species including largemouth bass, channel catfish, carp, crappie, bluegill, and green sunfish. Since 1985 there has been a fish consumption advisory on the Blue River due to elevated chlordane levels. In their advisory, the Missouri Department of Health (MDOH) recommends that if anglers eat fatty fish (carp, catfish, buffalo, drum, suckers and paddlefish) from anywhere in Missouri outside of the Ozark region, that they limit their consumption to no more than one meal per week. Pregnant or nursing mothers and young children may be at higher risk and should consume even less than one meal per week of contaminated fish. Carp and channel catfish fillets have also had levels of dieldrin exceeding the U.S. Food and Drug Administration (USFDA) action level (McGrath 1988).

Water Use

There are no public surface withdrawals in the Blue River basin (MDNR 1984).

Point Source Pollution

The Blue River is subject to severe point and non-point source pollution (MDNR 1984, Figure ps). In 1967, the Clean Water Commission determined that all discharges except uncontaminated cooling water would be removed from the basin. This protected stream status will not be achieved as long as sewage treatment effluent continues to enter the Blue River from Indian Creek. Heavy organic loading depresses dissolved oxygen levels, elevates ammonia and solids levels, and poses a barrier to fish movement.

Heavy industry along the lower Blue River produces runoff that contains some priority pollutants. Priority pollutants are contaminants in need of control due to significant impacts when discharged. There are also significant amounts of priority pollutants in the runoff contributing to the flow of Brush Creek. During wet weather, the Blue River significantly increases some priority pollutants in the Missouri River, but these do not exceed water quality standards.

MDNR (1984) considers other point source discharges in the basin to be insignificant. However, there are some large landfills in the basin. The leachate from these sources could have adverse impacts on aquatic life.

Non-Point Source Pollution (MDNR 1984)

In the Kansas portion of the Blue River basin, there are some agricultural sources of non-point source pollution which have occasionally depressed dissolved oxygen levels, increased turbidity, and elevated fecal coliform levels above whole-body-contact recreation criteria. In the urbanized areas of the watershed, nutrient and BOD concentrations in runoff cause more problems than sediment.

A study of combined sewer overflows (CSO's) indicated that even small wet-weather events cause solids from non-point sources and CSO's to overshadow point sources. The contribution of pollution by sewage treatment plants is insignificant compared to non-point sources during large storm events.

Persistent chemicals such as chlordane and dieldrin have been used throughout the watershed. Residues of these chemicals have been detected above the FDA action levels in fish from the Blue River.

Table 4. Stream use classifications for the Blue River basin (MDNR 1984).

Site	Beneficial Uses
*Blue River: below Guinotte Dam	Industrial
*Blue River: Guinotte Dam to 59 th St.	Aquatic life, wildlife watering, boating, industrial withdrawal
*Blue River: 59 th St. to Bannister Rd.	Aquatic life, wildlife watering, boating, whole- body-contact recreation
**Blue River: Bannister Rd. to Kansas state line	Aquatic life, livestock and wildlife watering, boating, whole-body-contact recreation
**Indian Creek: Mouth to Kansas state line	Aquatic life, wildlife watering, whole-body-contact recreation

^{*}Class P: Permanently flowing stream.

^{**}Class C: May cease flow during prolonged dry weather, but maintains permanent pools.

